

MILITARY SPECIFICATION SHEET

SYNCHRO, CONTROL DIFFERENTIAL TRANSMITTER, TYPE 26V-08CDX4C

This amendment forms a part of Military Specification Sheet MIL-S-20708/80D dated 19 December 1968, and is approved for use by all Departments and Agencies of the Department of Defense.

PAGE 2

Table II and notes above and below Table II - Delete entirely and substitute the following

"TABLE II. Military Part Number Variant Characteristics

MILITARY PART NO. <u>1/</u>	SHAFT DIAMETER NOMINAL	SHAFT STYLE	TERMINATION	L' DIMENSION TO STOP ON SHAFT	L DIMENSION FREE SHAFT LENGTH
M20708/80-01C	.090	Plain & Slotted	Wire Leads	.375 ± .010	.312 ± .010
M20708/80-02C	↓	↓	↓	.550 ↓	.500 ↓

1/ Military part number M20708/80-01C shall be the NATO Standard.

1/ The suffix letter following the numerical dash number corresponds to the latest modification letter in the type designation."

MIL-S-20708/80D  
AMENDMENT 1

Add a new Table III and note as follows:

"TABLE III. Military Part Number Cross-References

SUPERSEDED MILITARY PART NUMBERS		NEW MILITARY PART NUMBERS
MIL-S-20708/80D	MIL-S-20708/80C	
M20708/80D-001 M20708/80D-002	M20708/80-001	M20708/80-01C M20708/80-02C

NOTE: All line items shown in Table III refer to equivalent and interchangeable synchros of the same type designation modification. Part number changes do not affect form, fit, or function of the synchros listed therein."

Custodians:

Army - AR  
Navy - AS  
Air Force - 85

Preparing activity:

Navy - AS  
Project No. 5990-0313-42

Review activities:

Army - ME  
Navy - OS, SH, EC  
Air Force - 11, 17, 19, 99  
DSA - ES

User activities:

Army -  
Navy - MC, CG  
Air Force -

MIL-S-20708/80E  
30 July 1987

SUPERSEDING  
MIL-S-20708/80D  
19 December 1968

MILITARY SPECIFICATION SHEET  
SYNCHRO, CONTROL DIFFERENTIAL TRANSMITTER, TYPE 26V-08CDX4C

This specification is approved for use by all Departments and Agencies of the Department of Defense. The requirements for acquiring the Synchros described herein shall consist of this specification and the latest issue of MIL-S-20708.

TABLE I. Requirements.

Requirement	Value	Unit	Tolerance
Frequency	400	Hz	±1%
Primary Voltage	11.8	volts	±1%
Primary Current	108	milliamps	maximum
Primary Power	0.29	watts	maximum
Impedance:			
Z <sub>so</sub>	95.0-120.0	ohms	min.-max.
Z <sub>rs</sub>	35.0-48.0	ohms	min.-max.
Impedance Angle:			
Z <sub>so</sub>	74.0-79.0	degrees	min.-max.
Z <sub>rs</sub>	15.0-20.0	degrees	min.-max.
Transformation Ratio	1.154	-----	±2%
Phase Shift (Lead)	9.5	degrees	±1.5
Electrical Error	7.0	minutes	maximum
Null Voltage:			
Total	30	millivolts	maximum
Fundamental	20	millivolts	maximum
Friction Torque	0.04	ounce-inches	maximum
Radial Play	0.0004	inches	maximum
End Play	0.0007	inches	maximum
Temperature Rise	20	degrees (C)	maximum

TABLE II. Military part number variant characteristics.

Military Part No. 1/	A ±.010	B ±.010	G Maximum	Shaft Style	Terminal End	U +.0000
M20708/80-01C	.375	.312	1.240	Plain & Slotted	Wire Leads	.090
M20708/80-02C	.550	.500	1.240	Plain & Slotted	Wire Leads	.090

1/Military part number M20708/80-01C shall be the NATO standard.

1/The suffix letter following the numerical dash number corresponds to the latest modification letter in the type designation.

TABLE III. Military part number cross-references.

SUPERSEDED MILITARY PART NUMBERS		NEW MILITARY PART NUMBERS
MIL-S-20708/80D	MIL-S-20708/80C	
M20708/80D-001 M20708/80D-002	M20708/80-001	M20708/80-01C M20708/80-02C

NOTE: All line items shown in Table III refer to equivalent and interchangeable synchros of the same type designation modification. Part number changes do not affect form, fit, or function of the synchros listed therein.

Custodians:

Army-AR  
Navy-AS  
Air Force-85

Preparing Activity:

Navy-AS

(Project 5990-0334-63)

Review Activities:

Army-MI,AV  
Navy-OS  
Air Force-11,17,99  
DLA-ES

User Activities:

Navy-MC,CG

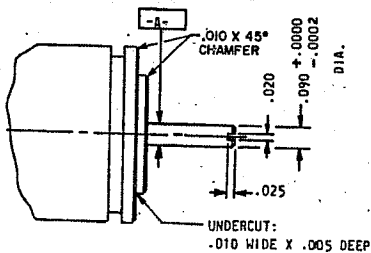
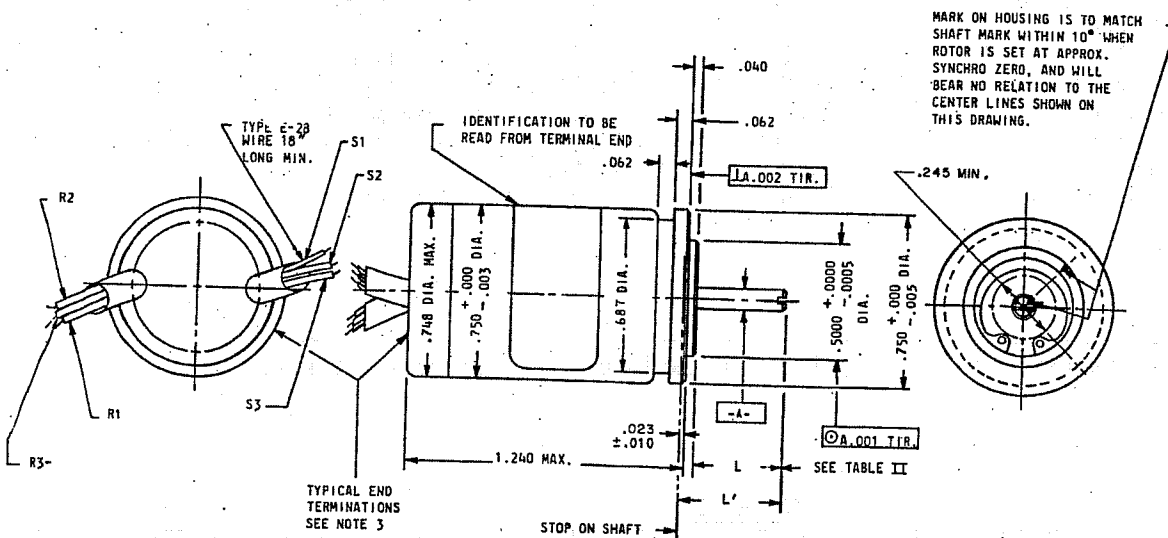
MIL-S-20708/80D  
 19 December 1968  
 SUPERSEDING  
 MIL-S-20708/80C  
 1 APRIL 1965

MILITARY SPECIFICATION SHEET  
 SYNCHRO CONTROL DIFFERENTIAL TRANSMITTER, TYPE 26V-08CDX4c

This Specification is Mandatory for Use by all Departments and Agencies of the Department of Defense.

THE COMPLETE REQUIREMENTS FOR PROCURING THE SYNCHRO DESCRIBED HEREIN SHALL  
 CONSIST OF THIS DOCUMENT AND THE ISSUE IN EFFECT OF MIL-S-20708.

UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN INCHES  
 TOLERANCE ON FRACTIONS  $\pm 1/64$   
 DECIMALS  $\pm .005$  ANGLES  $\pm 2^\circ$



NOTES:

- PERPENDICULARITY AND CONCENTRICITY SHALL BE MEASURED WITH THE UNIT IN A VERTICAL POSITION SUPPORTED BY THE SHAFT, THEN THE HOUSING ROTATED.
- RUNOUT OF FEATURE "A" (SMOOTH PORTION) OF SHAFT SHALL NOT EXCEED .0008 TIR.
- END PLAY AND RADIAL PLAY SHALL BE MEASURED DURING THE REVERSAL OF THE FOLLOWING LOADS:  
 END PLAY - 1/2 POUND RADIAL PLAY - 1/2 POUND
- TERMINAL LEAD WIRES SHALL DEPART THROUGH THE BACK SURFACE OF THE TERMINAL END OF THE SYNCHRO IN ANY ACCEPTABLE MANNER.
- MINOR VARIATIONS OF UNIT CONFIGURATION ARE PERMITTED FOR UNDIMENSIONED DESIGN DETAIL.
- PENDING ISSUANCE OF A QUALIFIED PRODUCTS LIST (QPL) A SAMPLE OF THE SYNCHROS TO BE FURNISHED UNDER THIS SPECIFICATION SHALL BE SUBJECT TO THE PREPRODUCTION TESTS AS SPECIFIED IN MIL-S-20708.
- "DIELECTRIC WITHSTANDING TEST POTENTIAL SHALL BE 500 +0 -15 RMS VOLTS FOR INITIAL APPLICATIONS AND 400  $\pm$  12 RMS VOLTS FOR SUBSEQUENT TESTS; AND THE INSULATION RESISTANCE TEST SHALL BE PERFORMED WITH A D.C. POTENTIAL OF 250 VOLTS."
- FOR INFORMATION ONLY, SEE SYNCHRO CLAMP MS-17183.

FSC 5990

SHEET 1 OF 2

TABLE I

Requirement	Value	Unit	Tolerance
Frequency	400	Hz	+1%
Primary Voltage	11.8	volts	nominal
Primary Current	108.0	milliamps	maximum
Primary Power	0.24	watts	nominal
Impedance:			
Z <sub>so</sub>	95.0-120.0	ohms	min.-max.
Z <sub>rs</sub>	35.0-48.0	ohms	min.-max.
Impedance Angle:			
Z <sub>so</sub>	74.0-79.0	degrees	min.-max.
Z <sub>rs</sub>	15.0-20.0	degrees	min.-max.
Transformation Ratio	1.154	-----	+2%
Phase Shift	9.5(lead)	degrees	±1.5
Electrical Error	7.0	minutes	maximum
Null Voltage:			
Total	30.0	millivolts	maximum
Fundamental	20.0	millivolts	maximum
Friction Torque	0.04	ounce-inches	maximum
Radial Play	0.0004	inches	maximum
End Play	0.0007	inches	maximum
Temperature Rise	20.0	degrees(C)	maximum

Part number: M20708/80D plus applicable dash number from Table II.

TABLE II

DASH NO.	SHAFT DIAMETER	SHAFT STYLE	TERMINAL END	L' DIMENSION TO STOP ON SHAFT	L REFERENCE FREE SHAFT LENGTH
*-001	.090	Plain & Slotted	18" Wire Leads	.375 ± .010	.312 ± .010
002	.090	↓	↓	.550 ↓	.500 ↓

\*Dash number -001 shall be the NATO Standard, any subsequent dash number illustrated on Table II shall be permitted.

Custodians:  
 Army-MU  
 Navy-AS  
 Air Force-85

Review Activities:  
 Army-EL,MI,MO,AV,MU  
 Navy-SH,OS,AS  
 Air Force-11,17,85  
 DSA-ES

User Activities:  
 Navy-SH,OS,AS,MC,CG

Preparing Activity:  
 Navy-AS  
 Project No. 5990-0190

**SPECIFICATION ANALYSIS SHEET**

Form Approved  
Budget Bureau No. 119-R004

**INSTRUCTIONS**

This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity (as indicated on reverse hereof).

SPECIFICATION  
MIL-S-20708/80D

ORGANIZATION (of submitter)

CITY AND STATE

CONTRACT NO.

QUANTITY OF ITEMS PROCURED

DOLLAR AMOUNT

MATERIAL PROCURED UNDER A

DIRECT GOVERNMENT CONTRACT

SUBCONTRACT

1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?  
A. GIVE PARAGRAPH NUMBER AND WORDING.

B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES.

2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID

3. IS THE SPECIFICATION RESTRICTIVE?

YES  NO IF "YES", IN WHAT WAY?

4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)

SUBMITTED BY (Printed or typed name and activity)

DATE

FOLD

DEPARTMENT OF THE NAVY  
Naval Air Engineering Center  
Philadelphia, Pennsylvania 19112

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Weapons Engineering Standardization Office (Code X)  
Naval Air Engineering Center  
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